

Inasmuch as the present amendment raises no new issues for consideration and, in any event, places the present application in condition for allowance or in better condition for consideration on appeal, its entry under the provisions of 37 CFR 1.116 are respectfully requested.

Claims

Upon entry of this amendment, claims 1, 3-5 and 9-12 are pending.

Independent claims 1, 10 and 12 are amended to include subject matter from dependent claims which have thus been cancelled. Since the subject matter added to claims 1, 10 and 12 has already been considered by the Examiner, it is respectfully submitted that no new issues are raised.

Prior Art Rejections

In the Office Action claims 1, 3, 4, 6-8, 12 and 14-17 are rejected under 35 USC 102(b) as being anticipated by USP 5,711,300 (Schneider et al). Claims 2 and 5 are rejected under 35 USC 103 as being unpatentable over Schneider et al. in view of USP 5,378,987 (Ishihara et al). Claims 9-11 and 13 are rejected

under 35 USC 103 as being unpatentable over Schneider et al. in view of USP 5,938,599 (Rasche et al).

The present claimed invention as now defined by claim 1 is directed to a method of forming a magnetic resonance image of an object to be examined which includes the steps of acquiring magnetic resonance signals, determining the position of a measuring site, determining a geometrical relationship between the measuring site and the object being examined, reconstructing the magnetic resonance image from the magnetic resonance signals and on the basis of the position of the measuring site, reproducing a detail of the object being examined and an indication of the measuring site together in the magnetic resonance image, and deriving a correct position of the detail of the object being examined in the magnetic resonance image relative to the indication of the measuring site on the basis of the determined position of the measuring site and the determined geometrical relationship between the measuring site and the object being examined.

As mentioned above, no new issues are raised by the changes to claim 1 because the added features were set forth in dependent claims. Specifically, the feature of determining a geometrical relationship between the measuring site and the detail of the

object being examined was set forth in claim 14. The feature of the reproducing a detail of the object being examined and an indication of the measuring site in the magnetic resonance image was set forth in claim 2. The feature of correcting a position of the detail of the object being examined (i.e., deriving a corrected position) in the magnetic resonance image on the basis of the determined position of the measuring site was set forth in claim 2, and the reconstruction on the basis the determined geometrical relationship between the measuring site and the object being examined was set forth in claim 14. Thus, claim 1 now includes the features of claims 2 and 14.

Claims 10 and 12 are amended to include limitations similar to those added to claim 1.

Thus, claims 1, 10 and 12 recite that both the position of the measuring site and a geometrical relationship between the measuring site and the object being examined are considered when determining the correct position of the detail of the object in the magnetic resonance image.

Schneider et al., Ishihara et al. and Rasche et al. do not disclose, teach or suggest this feature.

With respect to Schneider et al., in the Office Action, the Examiner acknowledges that Schneider et al. does not disclose,

teach or suggest deriving a corrected position of a detail of an object being examined in the magnetic resonance image on the basis of the position of the indication of the measuring site (see page 10 of the Office Action which states that "Schneider et al. lacks directly teaching correcting the position of the detail in the magnetic resonance image on the basis of the position of the indication of the measuring site in the magnetic resonance image").

Ishihara et al. does not disclose, teach or suggest determining a correct position of a detail of an object in a magnetic resonance image at least partially on the basis of a geometrical relationship between the position of the detail of an object and a measuring site. Rather, Ishihara et al. appears to describe determining the temperature distribution in an object while accounting for displacement of the object. The displacement is accounted for by obtaining multiple magnetic resonance images and calculating a "difference image" (see col. 9, lines 16-31 of Ishihara et al.).

No mention is made in Ishihara et al. of deriving a corrected position based on geometrical relationship between the measuring site and the object being examined.

Rasche et al., does not disclose, teach or suggest determining a correct position of a detail of an object in a magnetic resonance image at least partially on the basis of a geometrical relationship between the position of the detail of an object and a measuring site and therefore does not close the gap between the present claimed invention as defined by claims 1, 10 and 12 and Schneider et al. alone or in combination with Ishihara et al.

In view of the foregoing claim 1 is patentable over Schneider et al under 35 USC 102 as well as 35 USC 103 and claims 10 and 12 are patentable over the cited references under 35 USC 102 as well as 35 USC 103.

Dependent claims 3-5, 9 and 11 are either directly or indirectly dependent on claims 1 and 10. These claims are separately patentable over the cited references and in view of their dependence on one of the independent claims. In view of the foregoing, claims 1, 3-5 and 9-12 are patentable over the cited references under 35 USC 102 as well as 35 USC 103.

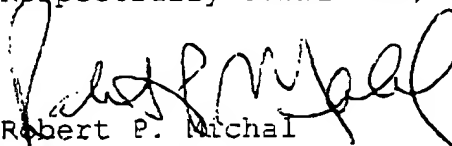
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If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where there is support for a contrary view.

Entry of the amendment, allowance of the claims, and the passing of the application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,



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(1) Copy of claim amendments showing changes made thereto

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COPY OF CLAIM AMENDMENTS SHOWING CHANGES MADE THERETO
SERIAL NO. 09/857,310

1. (Twice Amended) A method of forming a magnetic resonance image of [a region] an object to be [imaged] examined, comprising the steps of:

acquiring magnetic resonance signals,
determining the position of a measuring site, [and]
determining a geometrical relationship between the measuring site and the object being examined,

reconstructing the magnetic resonance image from the magnetic resonance signals and on the basis of the position of the measuring site,

reproducing a detail of the object being examined and an indication of the measuring site together in the magnetic resonance image, and

deriving a correct position of the detail of the object being examined in the magnetic resonance image relative to the indication of the measuring site on the basis of the position of the indication of the measuring site and the determined geometrical relationship between the measuring site and the object being examined.

10. (Twice Amended) A magnetic resonance imaging system for forming a magnetic resonance image of [a region] an object to be [imaged] examined comprising:

a coil system for acquiring magnetic resonance signals and for determining the position of a measuring site,

a unit for the determination of a geometrical relationship between the measuring site and the object being examined, and

a reconstruction unit for the reconstruction of the magnetic resonance image from the acquired magnetic resonance imaging signals and the position determined for the measuring site, the reconstruction unit being arranged to reproduce a detail of the object being examined and an indication of the measuring site together in the magnetic resonance image,

a correct position of the detail of the object being examined in the magnetic resonance image relative to the indication of the measuring site being derived on the basis of the position of the indication of the measuring site and the determined geometrical relationship between the measuring site and the object being examined.

12. (Twice Amended) A computer program which forms a magnetic resonance image of [a region] an object to be [imaged] examined containing instructions for:

the acquisition of magnetic resonance signals, and

the determination of the position of a measuring site,
the determination of a geometrical relationship between the
measuring site and the object being examined,
and

the reconstruction of a magnetic resonance image from the
magnetic resonance imaging signals and on the basis of the
position [determined for] of the measuring site,

the reproduction of a detail of the object being examined
and an indication of the measuring site together in the magnetic
resonance image, and

the derivation of a correct position of the detail of the
object being examined in the magnetic resonance image relative to
the indication of the measuring site on the basis of the position
of the indication of the measuring site and the determined
geometrical relationship between the measuring site and the
object being examined.

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